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NORTH CENTRAL FOREST EXPERIMENT STATION, FOREST SERVICE—U.S. DEPARTMENT OF AGRICULTURE

Folwell Avenue, St. Paul, Minnesota 55101

Large Groups In the Boundary Waters Canoe Area— Their Numbers, Characteristics, and Impact

ABSTRACT. — The impact of "large" parties in the BWCA is discussed in terms of their effect on the resource and on the experience of other visitors. The amount of use by large groups and the visitors most likely to be affected by a reduction in party size limit are described.

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The Superior National Forest's Boundary Waters Canoe Area (BWCA) in northeastern Minnesota is the most heavily used unit in the Wilderness System. Because of growing visitor use (about 10 percent annually), measures for protecting both landscape quality and quality of the wilderness experience are being contemplated.

One concern of the BWCA managers is the effect that large groups have on campsite wear and on the experience of other visitors. (For the purposes of this study "large" groups are defined as those having nine or more members.) Large parties pose a particular problem on campsites where tent space is limited. In parts of the BWCA it has been estimated that about 60 percent of the campsites should be limited to no more than three 7- by 9-foot tents because of the rocky and irregular topography. This would suggest a maximum group limit of nine per group, assuming three persons per tent.

The long-term effects of large parties on campsite, trail, and portage degradation are not well known. Nevertheless, observation by managers suggests the impact of larger parties is especially detrimental, particularly on the soil and vegetation of small campsites during periods of soil saturation. Because large parties contribute more foot traffic, watercraft, and tents to a given campsite, they represent more potential damage than do the same number of people in small parties. In addition, large groups often expand the site and clear areas to facilitate tents, other equipment, and eating space.

Several studies have indicated that large parties impair and degrade the wilderness experience for many visitors. Although such groups represent only a small proportion of total wilderness use, they have a disproportionate impact on the experience of other visitors.

The current BWCA camping limit is 15 people per party. The majority of managers believe this group-size limit should be lowered, and a reduction is being considered for the 1973 season. A decision is required by fall of 1972, so resort operators, outfitters, and other merchants will have sufficient time to notify customers in advance.

Important questions to consider in determining a group-size limit include: (1) How much use is by large groups? (2) Would a reduction in the party-size limit mean *many* people could or would not visit the BWCA? (3) What kinds of visitors would be affected most by a reduction in the group-size limit? (4) What is the impact of large groups on both the resource and other visitors' experiences? Group size data collected as part of a broader 1971 visitor study in the BWCA and information obtained from 1971

mandatory Travel Permits may be useful in helping to answer these questions.

Studies of visitor behavior aid the recreation planning process by indicating what the consequences of various management actions will be. The manager will know which *kinds* of visitors will be affected most and *how* they will be affected. Informing the public about data collected from visitor studies is also beneficial. It permits them to see how data on visitor behavior are utilized by managers, and it can serve to clarify questions people have about issues being discussed.

AMOUNT OF USE

"Large" groups (those with nine or more members) made up only a small proportion (8 percent) of all parties visiting the BWCA in 1971 (table 1). A reduction in the group-size limit would not affect many parties, even if the maximum per group were cut back to six persons. The data also suggest that reducing the party-size limit would not require adding numerous campsites in the BWCA, even assuming all the people currently in large groups will still visit the Area in smaller groups. If the limit is set at eight, for example, it means only a *maximum* increase in campsites of 8 percent is needed. This figure will be lower if some large parties decide not to come to the BWCA.

Obviously, large groups account for a greater proportion of total *visitors* than they do total parties. Even so, almost 50 percent of the 1971 visitors were in groups with fewer than five members.

Large groups accounted for a greater proportion of visitor-day use than they did visitors or parties. (A visitor-day is a *12-hour* use period.) This suggests that larger groups tend to stay in the Area longer than smaller parties.

TYPES OF USE

What types of visitors might be most affected if the limit on group size were left at 15 or reduced to 12, 10, or 8? Personal interviews with 1,352 groups of BWCA visitors conducted between May 14 and September 6, 1971, can shed some light on this question. Visitors were interviewed at the access point before they began their trip and were then given a "BWCA Trip Diary" to keep a daily log of their experiences. Diaries were returned by mail; more than 80 percent complied.

Larger parties were much more likely to travel by paddle canoe than were smaller groups (table 2A). Almost all parties with more than 10 members were paddlers.

A greater proportion of large parties than small parties visited the BWCA in June, July, and August (table 2B). This is partly because large parties tended to be comprised of youths visiting the BWCA under the leadership of some organization (table 2C). Family-related groups with nine or more members comprised a significant proportion of the large parties; however, few family-related groups had 11 or more members. Organizational groups not affiliated with base camps near the BWCA were more likely to be large than were locally based organizational groups. Seventy-nine percent of these nonlocally-based groups had more than eight members, while only 50 percent of the locally based groups had over eight per party.

Large groups tend to reside outside northeastern Minnesota (table 2D). About one-third of the larger groups came from the Twin Cities area and nearly one-half from states other than Minnesota. This suggests that administrators might have difficulty contacting the larger organizational groups, either to

Table 1. — *BWCA use (watercraft only) by party size for three selected recreation use classes, 1971*[1]

Use class	Total use	Size of party (individuals)							
		1-2	3-4	5-6	7-8	9-10	11-12	13-15	16+
	Number	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Parties	2/ 31,076	37	37	14	4	3	2	2	1
Visitors	3/ 127,499	17	32	18	7	7	6	8	5
Visitor-days	4/ 802,133	16	27	17	8	9	7	9	6

1/ Estimates from 1971 BWCA Travel Permits. Paddle canoe, motor canoe, motor boat use only; (snowmobile, hiking, and other use excluded).
2/ Includes 87 percent of all parties; all parties totaled 35,612.
3/ Includes 90 percent of all visitors; all visitors totaled 141,432.
4/ A visitor-day is a 12-hour use period. Includes 97 percent of all visitor-days of use; all visitor-days totaled 825,978.

Table 2. — *Percent of BWCA parties having selected recreation group characteristics, by party-size class, 1971*

Characteristics of recreation groups	All groups	Party-size class (Individuals) 9 +	11 +	13 +	16 +
	Percent	Percent	Percent	Percent	Percent
A. Primary mode of travel:	1/ (1,339)	(145)**	(96)**	(66)**	(27)**
Paddle canoe	57	86	93	96	100
Motor canoe	15	5	4	1	0
Motor boat	28	9	3	3	0
B. Month entered BWCA:	(1,342)	(145)*	(96)*	(66)*	(27)
May	14	6	3	3	7
June	24	28	26	30	26
July	27	31	30	30	37
August	29	34	40	37	30
September	6	1	1	0	0
C. Composition of party:	(1,319)	(145)**	(96)**	(66)**	(27)**
Family-related individuals	62	25	10	12	7
Friends, acquaintances	27	7	8	5	4
Northeastern-Minnesota-based youth groups 2/	4	19	19	9	0
Other organizational groups 3/	7	49	63	74	89
D. Place of residence:	(1,304)	(135)	(89)*	(64)	(26)*
Local 4/	21	16	12	13	11
Twin Cities Metropolitan Area 5/	37	37	33	30	23
Other Minnesota	7	6	7	9	4
Other than Minnesota	35	41	48	48	62
E. Use of an outfitter 6/:	(1,340)	(143)**	(94)**	(65)**	(26)**
Groups that were outfitted	36	49	58	71	89
Groups that were not outfitted	64	51	42	29	11
F. Outfitted groups only by composition of party:	(479)	(70)**	(54)**	(46)**	(24)**
Family-related individuals	61	29	15	15	8
Friends, acquaintances	28	7	7	4	4
Other organizational groups 3/	11	64	78	81	88
G. Length of stay 7/:	(1,342)	(145)**	(96)**	(66)**	(27)**
Day visit	22	10	5	6	0
1 to 2 nights	24	10	12	11	4
3 to 6 nights	39	47	52	53	70
7 + nights	15	33	31	30	26
H. Type of travel behavior 8/:	(818)	(114)**	(83)**	(54)**	(19)**
Moving trip	39	65	69	65	53
Destination trip	61	35	31	35	47
I. Penetration into back country 9/:	(1,071)	(124)**	(86)**	(57)**	(19)*
No portages crossed	18	9	4	5	0
1 to 2 portages	35	15	10	10	10
3 to 5 portages	18	19	22	30	37
6 to 8 portages	13	21	26	23	32
9 + portages	16	36	38	32	21
J. Travel to Canada:	(1,342)	(145)*	(96)	(66)	(27)
Groups that visited Canada	19	28	25	20	19
Groups that did not visit Canada	81	72	75	80	81

1/ All figures in parentheses are numbers of groups in the sample.
2/ Youth groups entering the Area from locally-based camps such as Sommer's Boy Scout Base, YMCA Camp Menogyn, Wilderness Canoe Base.
3/ Church, scout, public school and other organizational groups not having a base near the BWCA.
4/ Zip codes 556-558.
5/ Zip codes 550-554.
6/ Outfitted means they rented at least a canoe, boat or motor from an outfitter, resorter, or other merchant. Consequently, only some of the "outfitted" parties were completely outfitted.
7/ Includes nights in the BWCA and Canada. Nineteen percent of all parties visited Canada.
8/ Day visitors excluded.
9/ Number of portages crossed to reach maximum penetration into Area (number crossed before turning around and returning to the access point; portages crossed during daily side trips excluded).
* An overall Chi-square test indicates that the difference between size of party class shown and the class of all smaller parties (not shown) is significant beyond the 0.05 level.
** Differences significant beyond the 0.001 level.

inform them of planned changes in the group-size limit or explain the reasons for such changes. But because a high proportion of large parties rented at least some equipment (table 2E), contact with many large groups might be possible through outfitters, resorters, and other local businesses.

Although many large groups were outfitted to some extent, only 15 percent of *all* outfitted parties had nine or more members and only 5 percent of the outfitted groups had 16 or more members. These figures might appear misleading but are low because large parties represent a small percentage of total parties.

Of the parties outfitted, many were organizational groups based outside northeastern Minnesota (table 2F). (Groups originating from organizational base camps near the BWCA were not counted as "outfitted.") Eighty-five percent of these nonlocal organization parties had more than eight members; only 7 percent of the family-related groups had more than eight persons. For groups consisting of friends or acquaintances, only 4 percent had over eight members.

IMPACT OF USE

To what degree are large parties posing a threat to resource quality and to the experience of other visitors? Large groups characteristically stayed longer in the Area than small groups (table 2G). Almost all of the day use was by smaller parties. More than 80 percent of the large groups stayed at least 3 nights (4 days); about one-third stayed a week or longer.

Studying the travel patterns of visitors is another way of looking at the impact of various group sizes (table 2H). Excluding day visitors, proportionally more large groups were on "moving trips," meaning they broke camp often, than on "destination trips." Destination trips implied that the party had one or perhaps two lakes as a goal. This high mobility of larger groups suggests that they utilize more campsites and portages than small parties, and consequently have the potential for damaging more places. They also could encounter a greater number of other parties, which might result in more dissatisfaction for other groups.

Because more than half of the large parties kept moving, their impact on individual campsites was dispersed rather than concentrated. Staying in one location might be less damaging than using many sites, because the disturbance is increased by making and breaking camp several times.

The impact of large parties on visitor experience appears clearer. The degree to which large parties penetrate "back country" is one measure of this impact. More than three-fourths of the large parties made at least three portages (six total) to reach their maximum penetration into the Area (table 2I). A significantly lower proportion of the small groups penetrated as deeply. Consequently, the large groups dispersed through the Area more and tended to spend at least some of their time is areas less heavily used. But even if the effect on sites in the back country is not great, the presence of large groups poses a threat to enjoyment of other parties in these areas.

Large parties were somewhat more likely to visit Canada than smaller groups, although only 19 percent of all groups visited Canada (table 2J). Because relatively few large groups went into Canada, the problem will not be solved by waiting for Canadian land managers to lower their party-size limit.

SUMMARY

Although large groups do not represent a large proportion of total parties, they do account for a substantial percentage of total visitors and visitor-days of use. Large parties typically travel by paddle canoe, visit the Area predominantly in mid-summer, do not reside in northeastern Minnesota, are organizational youth groups not based near the BWCA, and are outfitted to some extent. There also is evidence that for current use patterns, the impact of large groups on the environment and on the experience of other visitors is greater than that of an equal number of people visiting the Area in small groups. Large parties characteristically stay longer, move camp more often, and penetrate farther into the back country than small parties. The implications of these data go beyond the BWCA. Similar characteristics might exist for other roadless and dispersed recreation areas.

A party-size limit lower than the present figure of 15 would affect certain types of visitors more than others. Leaving the limit at 15 or reducing it to 12, 10, or 8 would affect basically the same users, however. A limit of 15 or 12 would affect mostly organizational youth groups *not* based near the BWCA. A limit of 10 would largely affect these youth groups and some locally-based organizational parties as well. Many more of the nonlocal organization parties are large groups, however. A limit of eight would mostly affect these two visitor groups plus some family-related parties. Yet, the proportion of family-related groups with nine or more members was small. An alternative might be a party-size limit of 10 with a time table to reduce it to eight or even lower. This could permit leaders of youth groups, outfitters, and others to adequately plan and experiment with different group sizes.

What would be the effect on total use if the party-size limit were lowered to eight or 10? It is uncertain whether such a reduction would result in some parties not visiting the BWCA at all, or if most would readjust their party size to comply with the new rule. If they did continue to visit the Area, it simply would mean more groups but the same total number of visitors.

DAVID W. LIME
Geographer

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